

REMARKS

Examiner's comments in the Office Action dated June 3, 2005 have been carefully considered by Applicants. In view of such comments, Applicants have amended some of the claims as set forth herein. In particular, independent claims 1, 10, and 14 and also dependent claims 3 and 5 have all been amended to better highlight the patentable differences of Applicants' proposed invention as compared to the prior art cited and interpreted by Examiner in the Office Action. In making such amendments, Applicants maintain that no new matter has been introduced into the present Application. Furthermore, no claims have been altogether canceled, and no entirely new claims have been added. Thus, claims 1 through 20 remain pending in Applicants' present Application. It is Applicants' good faith belief that the pending claims, as presented herein, are both novel and non-obvious. Therefore, Applicants respectfully maintain that the pending claims now place the present Application in a condition for allowance and notice thereof is respectfully requested.

35 U.S.C. § 103(a)

In the Office Action, independent claims 1, 10, and 14 and also dependent claims 2-9, 11-13, and 15-20 stand rejected under 35 U.S.C. § 103(a) as being obvious and therefore unpatentable over United States Patent Number 6,226,744, issued to Murphy *et al.* on May 1, 2001 ("Murphy"), in view of United States Patent Number 6,480,935, issued to Carper *et al.* on November 12, 2002 ("Carper"). Applicants respectfully traverse each of these 35 U.S.C. § 103 rejections set forth in the Office Action in view of the claims as amended, for Applicants' invention as presently claimed is deemed not merely an obvious improvement over the prior art cited by Examiner.

With general regard to Examiner's rejections under 35 U.S.C. § 103, Applicants respectfully maintain that rejection for obviousness must be based upon objective evidence of record and requires that particular findings be made as to why a skilled artisan with no knowledge of the claimed invention would have selected the specific

components for combination in the manner claimed. Thus, in order for any prior art references themselves to be validly combined for use in a prior art obviousness rejection under 35 U.S.C. § 103(a), the references themselves, or some other piece of prior art, must suggest that they be combined. *In re Sernaker*, 217 U.S.P.Q. 1, 6 (C.A.F.C. 1983). That is, the suggestion to combine the references must not come from the Applicants' proposed invention itself. *Orthopedic Equipment Co. v. United States*, 217 U.S.P.Q. 193, 199 (C.A.F.C. 1983). In sum, in order to establish a *prima facie* case of obviousness, it is necessary to present evidence, in the form of some teaching, suggestion, incentive, or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art would have been led to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. *Ex parte Levengood*, 28 U.S.P.Q.(2d) 1300 (P.T.O.B.A.&I. 1993).

Applicants' Invention

Applicants' invention concerns a server architecture wherein data or information related to an individual smart card user is stored in a largely centralized manner. In centralizing the storage of such information in this manner, user information can be accessed, when properly authorized, by the individual smart card user himself or by pre-defined groups of vicarious users of the card such as merchants, the authorized user's doctor, the authorized user's family members, business associates, or even selected segments of the general public. In other words, Applicants' invention is not primarily focused on the user authorization aspects or authentication concerns of smart cards and smart card terminals. Instead, Applicants' invention is more concerned with providing a database architecture that can store large amounts of user information in a largely centralized manner so that all such user information can be easily accessed through the simple use of a smart card. In this way, the smart card essentially functions as a "key" which is able to "unlock" large amounts of data and information associated with a given smart card user for various different smart card transactions and applications.

To facilitate indexing and retrieval of such smart card user information pursuant to Applicants' invention, the user information is stored in partitioned memory locations within a central server or a largely centralized group of servers. In this way, user information is both stored and accessed according to (1) application/transaction type (for example, medical information, financial information, et cetera) and (2) designated accessibility/security level (for example, restricted access, limited public access, unrestricted public access, et cetera). To ensure that a user smart card is able to "unlock" as much user information as is possible, a smart card pursuant to Applicants' invention has an on-card memory that, for the most part, only stores (1) a user authorization/authentication code and (2) one or more memory-economizing data pointers. When the smart card is inserted in a smart card terminal, the data pointers are utilized to index and retrieve user information that is stored off card within a central server or a largely centralized group of servers. By primarily storing mere data pointers instead of a significant amount of actual user information or data within the smart card's memory, space within the smart card's memory is thereby conserved and economized to allow for many numerous data pointers to be stored therein. In this way, a smart card pursuant to Applicants' invention can be utilized to access larger amounts of user information than could be accessed if the card stored a significant amount of actual space-consuming user information on card. (Applicants' specification, p. 5, see full paragraph in middle of page beginning, "Each smart card 12 used with the system provides data pointers.... economically stored...."; p. 7, see first sentence in paragraph beginning at bottom of page, "the majority of the information is stored at a central location").

The Murphy Reference

In general, the Murphy reference is primarily concerned with authenticating a user over a network that provides restricted access to information that is stored on a server. To authenticate a user, Murphy teaches use of a strong cryptographic key by employing intelligence and stored user information on a smart card. Other than authentication information and miscellaneous restricted information, references to stored information in Murphy largely refer to user information that is directly stored on

the smart card itself. That is, the Murphy system is not concerned with attempting to store user information on a central database server or in any other largely centralized manner. Instead, the Murphy system mainly concerns storing significant amounts of user information directly on a smart card so that a user may utilize the card for user authentication purposes in order to gain access, for example, to a restricted web site or computer network. When specifically discussing and/or merely indirectly alluding to the storage of such significant amounts of user information directly on a smart card, Murphy nowhere mentions the use of "memory-economizing data pointers," or even anything analogous thereto, as presently claimed by Applicants. (Murphy, see column 2, lines 46-53, 64-65; column 3, lines 38-41; column 4, lines 3-4, 12-15, 23-27; column 5, lines 53-63; column 6, lines 16-20, 29-32, 36-40, 43-44, 64-67; column 7, lines 1-8, 22-29; column 11, lines 18-27; and column 14, lines 63-66). In addition, when specifically discussing and/or merely indirectly alluding to data that is both stored on a server and accessible via a smart card, Murphy nowhere mentions the use of "application-specific partitioned memory locations on a server," or even anything analogous thereto, as presently claimed by Applicants. (Murphy, see column 1, lines 61-67; column 2, lines 1-14; column 3, lines 34-36; column 4, lines 44-55; column 5, lines 1-20; column 6, lines 32-36, 43-44; and column 7, lines 8-10).

The Carper Reference

In general, the Carper reference is primarily concerned with a sophisticated method and system for managing memory space on a smart card. The memory management system taught by Carper specifically addresses the problem wherein very significant amounts of actual data are stored and retained on a smart card. (Carper, see column 2, lines 1-17; and column 4, lines 11-15, 27-35). When specifically discussing and/or merely indirectly alluding to the storage of such significant amounts of actual data on a smart card, Carper nowhere suggests both using "memory-economizing data pointers" and storing most data off-card within a central database server, as presently claimed by Applicants. Instead, Carper embraces the notion of storing significant amounts of actual data on the card by teaching a sophisticated method and system for managing memory space on a smart card. Thus, whereas

Applicants claim an invention that primarily stores mere data pointers on card and stores the majority of data off-card and in a central database server, Carper directly teaches away from Applicants' proposed invention by encouraging the storage of as much actual data as is possible on the card itself with a sophisticated on-card memory management system. Furthermore, though Carper teaches an on-card memory that is partitioned according to data types and/or individual applications, Carper neither teaches nor suggests the storage of data off card and within a central database server that has "application-specific partitioned memory locations" as presently claimed by Applicants. (Carper, see column 2, lines 42-48; and column 11, lines 21-26).

Applicants' Amended Claims

By the foregoing amendments to independent claims 1, 10, and 14, Applicants respectfully maintain that differences between both Murphy and Carper and Applicants' invention have been sufficiently highlighted so as to render independent claims 1, 10, and 14 and also dependent claims 2-9, 11-13, and 15-20 non-obvious in view of both Murphy and Carper.

In particular, independent claim 1 is distinguished from both Murphy and Carper because the claim as amended now recites and specifies a "central database server" that includes a plurality of "application-specific partitioned memory locations" wherein at least one of the application-specific partitioned memory locations contains "information associated with an authorized user of a smart card," the information being made accessible by a smart card terminal via "memory-economizing data pointers" contained in the memory on a smart card so as to "economize the information storage capacity" within the card's memory. In view of such, Applicants respectfully traverse the suggestion in the Office Action that Murphy teaches a plurality of partitioned memory locations as defined and claimed in the present Application. Though Murphy does disclose a memory module which may be any type of machine-readable storage device such as a RAM or ROM, the application-specific partitioned memory locations as claimed in Applicants' invention, in contrast, are associated with an authorized user of the smart card and are configured, for example, such as representatively shown in

Figure 3 of the present Application. Murphy does not disclose such application-specific partitioned memory locations wherein at least one of the memory locations contains information associated with an authorized user of a smart card. Instead, the only information referred to as being stored in the secure gateway server taught in Murphy is authorization information such as, for example, a user's social security number which is matched with user information stored on a smart card.

Furthermore, as specified in independent claim 1, user information stored in a "central database server" is made accessible by a smart card terminal via "memory-economizing data pointers" contained in the memory on a smart card, which neither Murphy nor Carper teaches or suggests. In all instances in the Murphy reference, for example, information from a card is accessed and compared with server information to thereby authorize a user's access to one or more restricted-access information servers. Thus, in the system taught by Murphy, most all information regarding a user of the smart card, other than some authorization information which may be stored elsewhere in the network to provide the smart card user access to restricted sites requiring authorization, is contained on the smart card itself. In contrast, Applicants' claimed invention concerns a centralized information database server for a smart card user which can be accessed once the user is authorized to access the system. That is, Applicants' claimed invention primarily concerns smart card use post-authorization, whereas the teachings of Murphy primarily concern the authorization process for anticipated use of a smart card. By storing most of the user information off the smart card and in a card-accessible centralized database, Applicants' invention successfully prevents unnecessary information storage redundancies and/or undesirable conflicting inaccuracies in certain ever-changing types of user information. For example, rather than having a user's smart card retain information regarding the user's ever-changing bank account balances, the smart card instead merely contains a memory-economizing data pointer for accessing the user's bank server so that the user can have access to the most up-to-date information on his bank account balances. Furthermore, by primarily storing mere data pointers instead of a significant amount of actual user information or data within the smart card's memory, space within the smart card's

memory is thereby conserved and economized to allow for many numerous data pointers to be stored therein. In this way, a smart card pursuant to Applicants' claimed invention can be utilized to access larger amounts of user information than could be accessed if the card stored a significant amount of actual space-consuming user information on card.

In sum, therefore, given that neither Murphy nor Carper teaches a "smart card applications network" as now specified in Applicants' independent claim 1, Applicants respectfully maintain that claim 1 is non-obvious in view of both Murphy and Carper. In view of such, Applicants respectfully request that Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) be withdrawn and that a Notice of Allowance for claim 1 be issued.

With regard to dependent claims 2 through 9, Applicants maintain that the inventive subject matter specified in these claims is non-obvious and therefore allowable for at least the same reason(s) that the subject matter in independent claim 1 is deemed allowable.

With regard to independent claim 10, Applicants maintain that the inventive subject matter specified in this claim is non-obvious and therefore allowable for generally the same reason(s) that the subject matter in independent claim 1 is deemed allowable.

With regard to dependent claims 11 through 13, Applicants maintain that the inventive subject matter specified in these claims is non-obvious and therefore allowable for at least the same reason(s) that the subject matter in independent claim 10 is deemed allowable.

With regard to independent claim 14, Applicants maintain that the inventive subject matter specified in this claim is non-obvious and therefore allowable for generally the same reason(s) that the subject matter in independent claim 1 is deemed allowable.

With regard to dependent claims 15 through 20, Applicants maintain that the inventive subject matter specified in these claims is non-obvious and therefore allowable for at least the same reason(s) that the subject matter in independent claim 14 is deemed allowable.

In sum, therefore, neither Murphy nor Carper teaches or suggests, either alone or in combination, a network arrangement for smart card applications wherein the majority of data is stored off card within a central database server having "application-specific partitioned memory locations" which are accessible with a smart card that primarily stores "memory-economizing data pointers" on card so as to "economize the information storage capacity" within the memory on the smart card. Given that such a network arrangement for smart card applications is now generally claimed in Applicants' independent claims 1, 10, and 14 as presently amended, Applicants respectfully maintain that the combination of Murphy in view of Carper does not render obvious Applicants' invention as specified in these claims. Furthermore, given that claims 2-9, 11-13, and 15-20 are dependent on claims 1, 10, and 14, Applicants further respectfully maintain that the subject matter of dependent claims 2-9, 11-13, and 15-20 is not rendered obvious either.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that independent claims 1, 10, and 14, as well as claims 2-9, 11-13, and 15-20 dependent thereon, are both novel and non-obvious with respect to the disclosures and teachings of Murphy and Carper. Therefore, Applicants respectfully request that Examiner's rejections under 35 U.S.C. § 103(a) be withdrawn and that a Notice of Allowance be issued therefor.

Should Examiner have any questions with respect to any matter now of record, Examiner is invited to contact Applicants' undersigned attorney at (248) 223-9500.

Respectfully submitted,

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